



TORQ Analysis of Operations Research Analysts to Statistical Assistants




INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Operations Research Analysts	15-2031.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Statistical Assistants	43-9111.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:






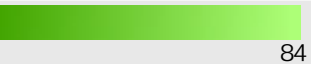





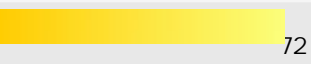
85

Ability TORQ				Skills TORQ				Knowledge TORQ			
Level		90		Level		82		Level		82	
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Finger Dexterity	37	14	50	No Skills Upgrade Required!				No Knowledge Upgrades Required!			
Perceptual Speed	37	9	56								
Speech Recognition	48	6	65								
Near Vision	57	4	72								
Speech Clarity	48	2	65								
Selective Attention	44	2	62								
Visualization	37	2	50								















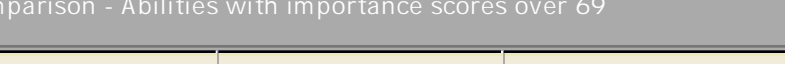
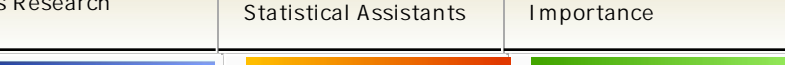

LEVEL and IMPT (IMPORTANCE) refer to the Target Statistical Assistants. GAP refers to level difference between Operations Research Analysts and Statistical Assistants.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Operations Research Analysts	Statistical Assistants	Importance
Mathematical Reasoning	 67	 67	 90
Number Facility	 66	 64	 84
Oral Comprehension	 64	 59	 72
Near Vision	 53	 57	 72



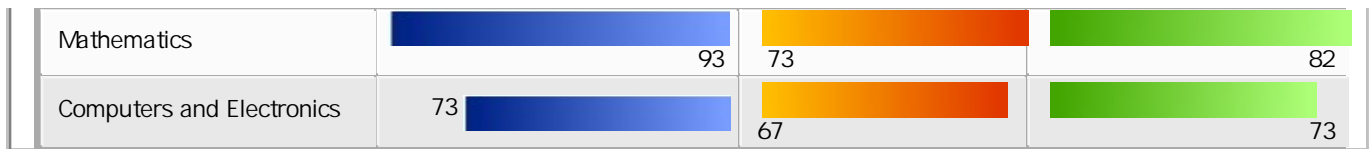
Written Comprehension		64	53	65
Oral Expression		64	57	65
Information Ordering		55	51	65
Category Flexibility		57	51	65
Speech Recognition		42	48	65
Speech Clarity		46	48	65
Written Expression		62	53	62
Deductive Reasoning		62	55	62
Inductive Reasoning		60	48	62
Selective Attention		42	44	62
Problem Sensitivity		57	44	56
Flexibility of Closure		51	42	56
Perceptual Speed		28	37	56
Fluency of Ideas		60	50	53
Originality		57	44	53
Visualization		35	37	50
Finger Dexterity		23	37	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Operations Research Analysts	Statistical Assistants	Importance
Reading Comprehension	<div><div></div></div> 86	<div><div></div></div> 72	<div><div></div></div> 94
Critical Thinking	<div><div></div></div> 82	<div><div></div></div> 70	<div><div></div></div> 89
Mathematics	<div><div></div></div> 91	<div><div></div></div> 72	<div><div></div></div> 86
Active Listening	76 <div><div></div></div>	<div><div></div></div> 67	<div><div></div></div> 85
Time Management	59 <div><div></div></div>	<div><div></div></div> 59	<div><div></div></div> 83
Complex Problem Solving	<div><div></div></div> 85	<div><div></div></div> 68	<div><div></div></div> 73
Quality Control Analysis	63 <div><div></div></div>	<div><div></div></div> 59	<div><div></div></div> 72
Active Learning	80 <div><div></div></div>	<div><div></div></div> 70	<div><div></div></div> 71
Speaking	71 <div><div></div></div>	<div><div></div></div> 61	<div><div></div></div> 69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Operations Research Analysts	Statistical Assistants	Importance
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Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Operations Research Analysts	Statistical Assistants	Description	Operations Research Analysts	Statistical Assistants
10+ years	0%	0%	Doctoral	12%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	4%	0%	Post-Masters Cert	0%	0%
4-6 years	8%	14%	Master's Degree	70%	18%
2-4 years	29%	13%	Post-Bachelor Cert	0%	0%
1-2 years	8%	23%	Bachelors	16%	43%
6-12 months	8%	27%	AA or Equiv	0%	12%
3-6 months	0%	12%	Some College	0%	15%
1-3 months	0%	0%	Post-Secondary Certificate	0%	8%
0-1 month	0%	0%	High School Diploma or GED	0%	2%
None	41%	8%	No HSD or GED	0%	0%

Operations Research Analysts

Statistical Assistants

Most Common Educational/Training Requirement:

Master's degree

Moderate-term on-the-job training

Job Zone Comparison

5 - Job Zone Five: Extensive Preparation Needed

Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

3 - Job Zone Three: Medium Preparation Needed

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Tasks

Operations Research Analysts

Core Tasks

Generalized Work Activities:

- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Interacting With Computers - Using

Statistical Assistants

Core Tasks

Generalized Work Activities:

- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.



computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.

- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Processing Information - Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.

Specific Tasks

Occupation Specific Tasks:

- Analyze information obtained from management in order to conceptualize and define operational problems.
- Break systems into their component parts, assign numerical values to each component, and examine the mathematical relationships between them.
- Collaborate with others in the organization to ensure successful implementation of chosen problem solutions.
- Collaborate with senior managers and decision-makers to identify and solve a variety of problems, and to clarify management objectives.
- Define data requirements; then gather and validate information, applying judgment and statistical tests.
- Design, conduct, and evaluate experimental operational models in cases where models cannot be developed from existing data.
- Develop and apply time and cost networks in order to plan, control, and review large projects.
- Develop business methods and procedures, including accounting systems, file systems, office systems, logistics systems, and production schedules.
- Formulate mathematical or simulation models of problems, relating constants and variables, restrictions, alternatives, conflicting objectives, and their numerical parameters.
- Observe the current system in operation, and gather and analyze information about each of the parts of component problems, using a variety of sources.
- Perform validation and testing of models to ensure adequacy; reformulate models as necessary.
- Prepare management reports defining and evaluating problems and recommending solutions.
- Specify manipulative or computational

- Processing Information - Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Specific Tasks

Occupation Specific Tasks:

- Check source data in order to verify its completeness and accuracy.
- Check survey responses for errors such as the use of pens instead of pencils, and set aside response forms that cannot be used.
- Code data as necessary prior to computer entry, using lists of codes.
- Compile reports, charts, and graphs that describe and interpret findings of analyses.
- Compile statistics from source materials, such as production and sales records, quality-control and test records, time sheets, and survey sheets.
- Compute and analyze data, using statistical formulas and computers or calculators.
- Discuss data presentation requirements with clients.
- Enter data into computers for use in analyses and reports.
- File data and related information, and maintain and update databases.
- Interview people and keep track of their responses.
- Organize paperwork such as survey forms and reports for distribution and for analysis.
- Participate in the publication of data and information.
- Select statistical tests for analyzing data.
- Send out surveys.

Detailed Tasks

Detailed Work Activities:

- assist with business or managerial research
- collect scientific or technical data
- collect statistical data
- compile numerical or statistical data



methods to be applied to models.

- Study and analyze information about alternative courses of action in order to determine which plan will offer the best outcomes.

Detailed Tasks

Detailed Work Activities:

- advise clients or customers
- advise governmental or industrial personnel
- analyze operational or management reports or records
- analyze scientific research data or investigative findings
- assist with business or managerial research
- collect scientific or technical data
- collect statistical data
- communicate technical information
- compile numerical or statistical data
- confer with research personnel
- create mathematical or statistical diagrams or charts
- design computer programs or programming tools
- develop management control systems
- develop mathematical ideas or interpretations
- develop mathematical simulation models
- develop or maintain databases
- develop records management system
- develop tables depicting data
- direct and coordinate scientific research or investigative studies
- evaluate management programs
- explain complex mathematical information
- follow statistical process control procedures
- make presentations
- obtain information from individuals
- perform statistical modeling
- plan scientific research or investigative studies
- prepare reports
- prepare reports for management
- prepare technical reports or related documentation
- program computers for management analysis applications
- program computers using existing software
- provide expert testimony on research results
- recommend further study or action based on research data

- create mathematical or statistical diagrams or charts
- ensure correct grammar, punctuation, or spelling
- maintain records, reports, or files
- operate business machines
- operate calculating devices
- prepare reports
- proofread printed or written material
- use computers to enter, access or retrieve data
- use graphs to explain results of statistical analyses
- use library or online Internet research techniques
- use oral or written communication techniques
- use relational database software
- use spreadsheet software
- use word processing or desktop publishing software
- verify completeness or accuracy of data
- verify investigative information
- write business correspondence

Technology - Examples

Analytical or scientific software

- Benfield ReMetrica
- Insightful S-PLUS
- Minitab software
- SAS software
- SPSS software
- StataCorp Stata
- StatSoft STATISTICA software
- Systat Software SigmaStat
- The Mathworks MATLAB

Customer relationship management CRM software

- Avidian Technologies Prophet

Data base reporting software

- Business Objects Crystal Reports

Data base user interface and query software

- dBase
- Microsoft Access
- Structured query language SQL

Development environment software



- resolve engineering or science problems
- select business applications for computers
- use computer application flow charts
- use computers to enter, access or retrieve data
- use cost benefit analysis techniques
- use interpersonal communication techniques
- use knowledge of investigation techniques
- use library or online Internet research techniques
- use long or short term production planning techniques
- use mathematical or statistical methods to identify or analyze problems
- use object-oriented computer programming techniques
- use project management techniques
- use quantitative research methods
- use relational database software
- use scientific research methodology
- use spreadsheet software
- use statistical cost estimation methods
- use word processing or desktop publishing software
- write scholarly or technical research papers
- write technical specifications for computer systems, software or applications

Technology - Examples

Analytical or scientific software

- A mathematical programming language AMPL
- Business Forecast Systems Forecast Pro
- Claritas PRIZM NE
- ESRI ArcExplorer
- General algebraic modeling system GAMS
- Hyperion Solutions Hyperion Intelligence
- iGrafx software
- ILOG OPL-CPLEX Development System
- Imagine That Extend OR
- Insightful S-PLUS
- LINDO Systems LINGO
- Mesquite Software CSIM
- Mixed integer optimizer MINTO
- ProModel software

- A programming language APL

- Microsoft Visual Basic

Electronic mail software

- Microsoft Outlook

Financial analysis software

- GGY AXIS

- PolySystems Asset Delphi

- Towers Perrin MoSes

Graphics or photo imaging software

- Harvard Graphics software

Internet browser software

- Web browser software

Object or component oriented development software

- C++

- R

- Sun Microsystems Java

Office suite software

- Microsoft Office

Presentation software

- Microsoft PowerPoint

Spreadsheet software

- IBM Lotus 1-2-3
- Microsoft Excel

Word processing software

- Corel WordPerfect software
- Microsoft Word

Tools - Examples

- 10-key calculators
- Desktop computers
- Universal serial bus USB flash drives
- Liquid crystal display LCD video projectors
- Supercomputers
- Laptop computers
- Personal computers



- Rockwell Automation Arena

- SAS software

- SPSS software

- Stanford Business Software MINOS

- Stanford Business Software SNOPT

- Statistical software

- Telelogic System Architect

- The Mathworks MATLAB

- The MathWorks Simulink

- Wolfram Research Mathematica

Charting software

- Microsoft Office Visio

Computer aided design CAD software

- Mathsoft Mathcad

Computer aided manufacturing CAM software

- Dassault Systemes CATIA software

Data base management system software

- MySQL software

Data base reporting software

- Business Objects Crystal Reports

- Strategic Reporting Systems ReportSmith

Data base user interface and query software

- Microsoft Access

- Oracle software

- Structured query language SQL

Development environment software

- C

- Microsoft Visual Basic

Map creation software

- ESRI ArcGIS software

- Microsoft MapPoint

Object or component oriented development software

- C++

- R

- Sun Microsystems Java



- Sybase PowerBuilder

Office suite software

- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Microsoft Project

Spreadsheet software

- Microsoft Excel

Word processing software

- Microsoft Word

Tools - Examples

- Desktop computers

- Mainframe computers

- Laptop computers

- Personal computers

Labor Market Comparison

Description	Operations Research Analysts	Statistical Assistants	Difference
Median Wage	\$ 64,140	\$ 32,340	\$(31,800)
10th Percentile Wage	\$ 41,690	\$ 25,030	\$(16,660)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 75,720	\$ 36,520	\$(39,200)
90th Percentile Wage	\$ 87,250	\$ 39,200	\$(48,050)
Mean Wage	\$ 63,700	\$ 31,880	\$(31,820)
Total Employment - 2007	180	150	-30
Employment Base - 2006	187	151	-36
Projected Employment - 2016	210	151	-59
Projected Job Growth - 2006-2016	12.3 %	0.0 %	-12.3 %
Projected Annual Openings - 2006-2016	6	7	1

National Job Posting Trends

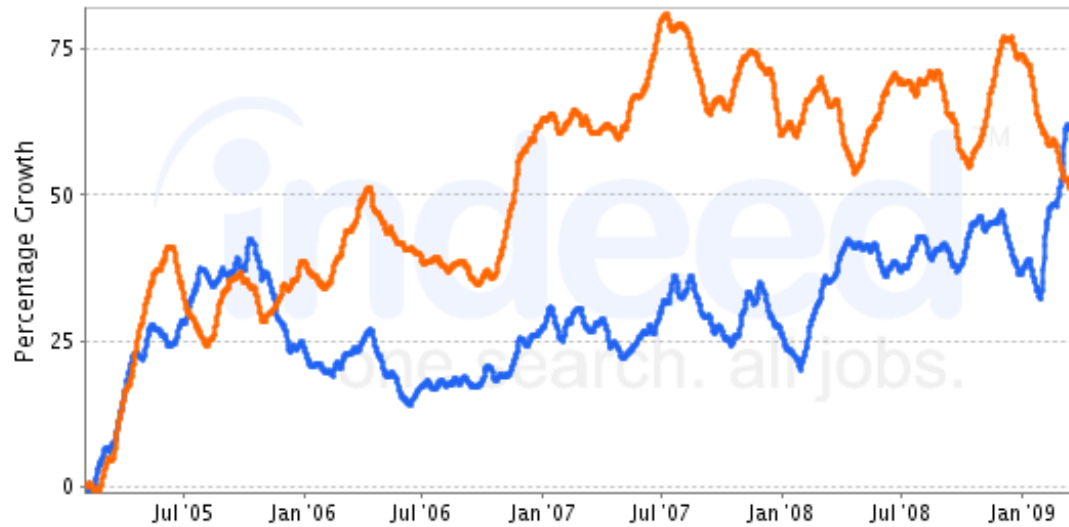
Trend for Operations Research Analysts

Trend for
Statistical Assistants



Job Trends from Indeed.com

— Operations Research Analyst — Statistical Assistant



Data from [Indeed](http://Indeed.com)

Recommended Programs

Accounting Technician

Accounting Technology/Technician and Bookkeeping. A program that prepares individuals to provide technical administrative support to professional accountants and other financial management personnel. Includes instruction in posting transactions to accounts, record-keeping systems, accounting software operation, and general accounting principles and practices.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Kennebec Valley Community College	92 Western Ave	Fairfield	www.kvcc.me.edu
University of Maine at Machias	9 O'Brien Ave	Machias	www.umm.maine.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

Maine Statewide Promotion Opportunities for Operations Research Analysts

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
15-2031.00	Operations Research Analysts	100	5	180	\$64,140.00	\$0.00	12%	6
13-2051.00	Financial Analysts	83	4	210	\$71,380.00	\$7,240.00	10%	4
15-1032.00	Computer Software Engineers, Systems Software	83	4	290	\$73,410.00	\$9,270.00	11%	8
19-2012.00	Physicists	82	5	50	\$93,210.00	\$29,070.00	-4%	1

11-3021.00	Computer and Information Systems Managers	80	5	870	\$83,130.00	\$18,990.00	8%	21
17-2112.00	Industrial Engineers	80	4	580	\$68,350.00	\$4,210.00	11%	22
17-2121.02	Marine Architects	80	4	60	\$75,520.00	\$11,380.00	-9%	1
17-2131.00	Materials Engineers	80	4	40	\$70,250.00	\$6,110.00	-7%	1
17-2071.00	Electrical Engineers	80	4	260	\$73,050.00	\$8,910.00	-10%	6
19-2043.00	Hydrologists	79	5	130	\$71,270.00	\$7,130.00	16%	5
13-2052.00	Personal Financial Advisors	79	3	360	\$94,100.00	\$29,960.00	10%	13
17-2141.00	Mechanical Engineers	79	4	620	\$67,210.00	\$3,070.00	-9%	14
17-2041.00	Chemical Engineers	78	4	170	\$81,330.00	\$17,190.00	-17%	5
11-9121.00	Natural Sciences Managers	78	5	180	\$79,810.00	\$15,670.00	8%	5
11-9041.00	Engineering Managers	77	5	720	\$91,030.00	\$26,890.00	-2%	14

Top Industries for Statistical Assistants

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
State government, excluding education and hospitals	929200	21.36%	4,808	4,718	-1.87%
Federal government, excluding postal service	919999	9.13%	2,055	1,943	-5.47%
Local government, excluding education and hospitals	939300	5.43%	1,222	1,372	12.34%
Self-employed workers, secondary job	000602	5.13%	1,155	1,150	-0.45%
Research and development in the physical, engineering, and life sciences	541710	3.94%	886	945	6.69%
General medical and surgical hospitals, public and private	622100	3.20%	720	797	10.71%
Management of companies and enterprises	551100	2.78%	626	722	15.28%
Management, scientific, and technical consulting services	541600	1.51%	339	606	78.52%
Self-employed workers, primary job	000601	1.47%	330	352	6.54%
Research and development in the social sciences and humanities	541720	1.45%	327	346	5.82%
Employment services	561300	1.13%	253	320	26.56%



Other insurance related activities	524290	1.06%	239	285	19.53%
Securities and commodity contracts, brokerages, and exchanges	5231-2	0.71%	159	237	49.22%
Other nondepository credit intermediation, including real estate credit and consumer lending	522290	0.71%	160	192	19.93%
Depository credit intermediation	522100	0.64%	145	148	1.95%

Top Industries for Operations Research Analysts

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Management, scientific, and technical consulting services	541600	9.10%	5,311	9,058	70.57%
Computer systems design and related services	541500	8.26%	4,822	6,221	29.00%
State government, excluding education and hospitals	929200	6.33%	3,695	3,464	-6.24%
Federal government, excluding postal service	919999	6.31%	3,682	2,993	-18.71%
Management of companies and enterprises	551100	5.97%	3,484	3,837	10.14%
Depository credit intermediation	522100	4.87%	2,840	2,766	-2.59%
Data processing, hosting, and related services	518200	3.95%	2,303	2,974	29.16%
Wired telecommunications carriers	517100	2.41%	1,409	1,057	-24.99%
Research and development in the physical, engineering, and life sciences	541710	2.40%	1,402	1,429	1.93%
Local government, excluding education and hospitals	939300	2.19%	1,275	1,369	7.33%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.14%	1,246	1,388	11.37%
Colleges, universities, and professional schools, public and private	611300	2.10%	1,227	1,311	6.89%
Other nondepository credit intermediation, including real estate credit and consumer lending	522290	1.99%	1,164	1,333	14.58%
Securities and commodity contracts, brokerages, and exchanges	5231-2	1.84%	1,076	1,505	39.85%
General medical and surgical hospitals, public and private	622100	1.77%	1,035	1,094	5.78%